

Translation

PATENT COOPERATION TREATY

PCT/EP2003/001981



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INTERNATIONAL PRELIMINARY EXAMINATION REPORT

10/506944

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference WA 2664-03WO	<b>FOR FURTHER ACTION</b> See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)	
International application No. PCT/EP2003/001981	International filing date (day/month/year) 27 February 2003 (27.02.2003)	Priority date (day/month/year) 08 March 2002 (08.03.2002)
International Patent Classification (IPC) or national classification and IPC H02J 3/28		
Applicant WOBBEN, Aloys		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.
2. This REPORT consists of a total of 11 sheets, including this cover sheet.
- ☒ This report is also accompanied by ANNEXES, i.e., sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).
- These annexes consist of a total of 2 sheets.

3. This report contains indications relating to the following items:

- I ☒ Basis of the report
- II ☐ Priority
- III ☐ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- IV ☒ Lack of unity of invention
- V ☒ Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- VI ☐ Certain documents cited
- VII ☐ Certain defects in the international application
- VIII ☐ Certain observations on the international application

Date of submission of the demand 07 October 2003 (07.10.2003)	Date of completion of this report 10 May 2004 (01.05.2004)
Name and mailing address of the IPEA/EP	Authorized officer
Facsimile No.	Telephone No.

# INTERNATIONAL PRELIMINARY EXAMINATION REPORT

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## I. Basis of the report

### 1. With regard to the elements of the international application:\*

- ☐ the international application as originally filed
- ☒ the description:  
 pages \_\_\_\_\_ 1-15 \_\_\_\_\_, as originally filed  
 pages \_\_\_\_\_, filed with the demand  
 pages \_\_\_\_\_, filed with the letter of \_\_\_\_\_
- ☒ the claims:  
 pages \_\_\_\_\_ 2-25 \_\_\_\_\_, as originally filed  
 pages \_\_\_\_\_, as amended (together with any statement under Article 19  
 pages \_\_\_\_\_, filed with the demand  
 pages \_\_\_\_\_ 1 \_\_\_\_\_, filed with the letter of \_\_\_\_\_ 17 March 2004 (17.03.2004)
- ☒ the drawings:  
 pages \_\_\_\_\_ 1/3-3/3 \_\_\_\_\_, as originally filed  
 pages \_\_\_\_\_, filed with the demand  
 pages \_\_\_\_\_, filed with the letter of \_\_\_\_\_
- ☐ the sequence listing part of the description:  
 pages \_\_\_\_\_, as originally filed  
 pages \_\_\_\_\_, filed with the demand  
 pages \_\_\_\_\_, filed with the letter of \_\_\_\_\_

### 2. With regard to the language, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item. These elements were available or furnished to this Authority in the following language \_\_\_\_\_ which is:

- ☐ the language of a translation furnished for the purposes of international search (under Rule 23.1(b)).
- ☐ the language of publication of the international application (under Rule 48.3(b)).
- ☐ the language of the translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

### 3. With regard to any nucleotide and/or amino acid sequence disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in written form.
- ☐ filed together with the international application in computer readable form.
- ☐ furnished subsequently to this Authority in written form.
- ☐ furnished subsequently to this Authority in computer readable form.
- ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

### 4. ☐ The amendments have resulted in the cancellation of:

- ☐ the description, pages \_\_\_\_\_
- ☐ the claims, Nos. \_\_\_\_\_
- ☐ the drawings, sheets/fig \_\_\_\_\_

### 5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).\*\*

\* Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rule 70.16 and 70.17).

\*\* Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.

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IV. Lack of unity of invention

1. In response to the invitation to restrict or pay additional fees the applicant has:

- ☐ restricted the claims.
- ☐ paid additional fees.
- ☐ paid additional fees under protest.
- ☐ neither restricted nor paid additional fees.

2. ☐ This Authority found that the requirement of unity of invention is not complied with and chose, according to Rule 68.1, not to invite the applicant to restrict or pay additional fees.

3. This Authority considers that the requirement of unity of invention in accordance with Rules 13.1, 13.2 and 13.3 is

- ☐ complied with.
- ☒ not complied with for the following reasons:

See supplemental box

4. Consequently, the following parts of the international application were the subject of international preliminary examination in establishing this report:

- ☒ all parts.
- ☐ the parts relating to claims Nos. \_\_\_\_\_

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## Supplemental Box

(To be used when the space in any of the preceding boxes is not sufficient)

Continuation of: IV.3.

### Lack of unity of invention

The subject matter of independent claims 1, 16, 19 and 25 is already known or is not inventive (see Box V). The required unity of invention (PCT Rule 13.1) is thus not established because there can be no technical relationship among the independent claims within the meaning of PCT Rule 13.2 involving one or more of the same or corresponding special technical features if the subject matter of even one of the independent claims is not novel or inventive.

Simply put, the shared inventive concept (the so-called "special technical feature") that links all of the independent claims is the point of intersection of all of the independent claims. Features that are defined in only some of the independent claims cannot contribute to the required shared inventive concept of all of the independent claims.

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## V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

### 1. Statement

Novelty (N)	Claims	1	YES
	Claims	16, 19, 25	NO
Inventive step (IS)	Claims		YES
	Claims	1, 16, 19, 25	NO
Industrial applicability (IA)	Claims	1, 16, 19, 25	YES
	Claims		NO

### 2. Citations and explanations

Reference is made to the following documents:

D1: DE 42 32 516 A (SOURKOUNIS CONSTANTIS; BECK HANS PETER (DE)) 4 March 1993 (1993-03-04)

D2: ZEEUW DE W J ET AL: 'ON THE COMPONENTS OF A WIND TURBINE AUTONOMOUS ENERGY SYSTEM' PROCEEDINGS OF THE INTERNATIONAL CONFERENCE ON ELECTRICAL MACHINES. LAUSANNE, SWITZERLAND, 18-21 SEPTEMBER 1984, ZURICH, SWISS FED. INST. TECHNOLOGY, CH, Vol. PART 1 CONF. 1984, 18 September 1984 (1984-09-18), pages 193-196, XP001031999

D3: DE 200 02 237 U (SMA REGELSYSTEME GMBH) 13 July 2000 (2000-07-13)

1. The present application does not fulfill the criterion set forth in PCT Article 33(3) because the subject matter of independent claim 1 is not novel or inventive in relation to the prior art as defined in the Regulations (PCT Rule 64.1 to 64.3).

1.1. Document D2 discloses (cf. page 193) an isolated power network (autonomous grid) with at least one first power generator that uses a regenerative energy source, the power generator being a wind turbine with

a generator, a second generator SM2 being provided that can be coupled to an internal combustion engine (diesel), the rate of revolutions and blade position of the wind turbine being controllable ("two variable speed horizontal axis wind turbines"; "if the available wind power exceeds the power which is converted by the generator, the speed of the wind rotor has to be limited by aerodynamic means like blade-angle control") and a collecting bar (figure 1) for feeding the generated power into the network. A device attached to the collecting bar for registering the power required by the network is not explicitly mentioned, but document D2 (page 193, right-hand column, second paragraph) states: "if the available wind power exceeds the needed power for a longer time, the diesel can be stopped after being decoupled from the synchronous machine". Without a device for registering the power required by the network, it would not be possible to discern whether the available wind power exceeded the required power. For this reason, a person skilled in the art will understand this feature to be implicitly included.

1.2. If the available wind power exceeds consumer demand, document D2 discloses utilizing excess power output by transforming energy in a controllable consumer and producing hot water (cf. D2, page 195, middle of the left-hand column). Proceeding from prior art such as this, the problem to be addressed is that of making a possible excess supply of wind energy more useful.

1.3. The problem is solved according to claim 1 essentially by a scheme of power output compensation wherein a buffer storage device is provided that is well-suited for storing electrical power and that, in

the event of excess power, is charged first and, in the event of a shortage of power, is discharged first, before the internal combustion engine/generator is employed.

- 1.4. In the argument for patentability, the applicant only discusses document D1. The only mention of the other documents is the statement in the written reply of 15 March 2004 that "the other prior art documents are also based on a different technical concept from that now described in claim 1".

However, this argument cannot be considered convincing because the exact idea of claim 1 identified above, namely using an electrical power buffer storage device for an isolated power network with a wind turbine, internal combustion engine and electrochemical energy storage device (battery), is already known from document D1 (cf. in particular column 2, lines 20-62).

Therefore, contrary to the view expressed by the applicant, it is the opinion of the examiner that a skilled person, proceeding from D2 and incorporating the teaching of D1, can arrive at the subject matter of claim 1 without thereby exercising inventive skill..

2. Reference is made once again to the fact that only those features actually defined in claim 1 can contribute to the novelty/inventive step of the subject matter of claim 1. For reasons of procedural economy, the foregoing discussion of the subject matter of claim 1 already assumes that all of the features contained therein are required, which is

not actually the case at present; for example, the wind turbine is a "preferred", i.e. optional, feature to which claim 1 is currently not necessarily limited.

3. The present application does not satisfy the criterion stipulated in PCT Article 33(2) because the subject matter of independent claim 16 is not novel in relation to the prior art as defined in the Regulations (PCT Rule 64.1 to 64.3).

Document D2 discloses (cf. page 193) an isolated power network with at least one first primary power generator SM1 for generating electrical power for an isolated power network (figure 1: "autonomous grid"), a synchronous generator SM2 being provided, which functions as a network former and can also work in engine operation, and the power required to operate the engine being provided by the primary power generator (cf. D2, page 193, right-hand column: "the diesel can be stopped after being decoupled from the synchronous machine SM2 providing the commutation voltages for the converter and the reactive power asked by the load and the converter").

4. The present application does not satisfy the criterion stipulated in PCT Article 33(2) because the subject matter of independent claim 19 is not novel in relation to the prior art as defined in the Regulations (PCT Rule 64.1 to 64.3).

Document D2 discloses a method for controlling the operation of an isolated power network with at least one wind turbine (D2, page 193, figure 1), which is controlled such that it always generates only the required amount of electrical power should the usage



of electrical power on the network be less than the power generating capacity of the wind turbine (cf. D2, page 193, right-hand column: "to control the frequency of the autonomous grid two ways are possible:

- matching the power withdrawn from the wind to the power asked by the consumers by aerodynamic means...".

5. The present application does not satisfy the criterion stipulated in PCT Article 33(2) because the subject matter of independent claim 25 is not novel in relation to the prior art as defined in the Regulations (PCT Rule 64.1 to 64.3).

Document D2 discloses (cf. page 193) the use of a synchronous generator SM2 as a network former for a line-commutated power inverter for feeding AC voltage into an electrical supply network, the generator working in engine operation and the generator being driven by the provision of electrical power from a regenerative power generator SM1 (cf. D2, page 193, figure 1 and page 193, right-hand column: "the diesel can be stopped after being decoupled from the synchronous machine SM2 providing the commutation voltages for the converter and the reactive power asked by the load and the converter").

6. Pursuant to PCT Rule 5.1(a)(ii), the description should have cited documents D2 and D1 and briefly outlined the relevant prior art disclosed therein.

The independent claims should have been worded in the two-part form with all of the features known from D2 set out in a preamble (PCT Rule 6.3(b)).

7. The definition of the invention given in the description should have been adapted to the independent claims in order to avoid a lack of clarity when the claims are read alongside the description (PCT Article 6). For example, the feature "electrical power buffer storage device", which was incorporated into claim 1, is portrayed as optional in the description.

The phrase "aspect of the invention" used in the description (page 14, second paragraph) should have been deleted because the optional features indicated there are not defined in the independent claims and, consequently, the definition of the invention in the independent claims is inconsistent with the definition of the invention in the description (PCT Article 6).

8. The present application includes four claims formulated as independent claims, of which two are independent device claims (claims 1 and 16), one is an independent method claim (claim 19) and one is an independent use claim (claim 25).

Two or more independent claims in the same category (in this case, claims 1 and 16) are admissible only in justifiable exceptional cases (cf. PCT Guidelines, paragraphs III-3.3 and III-5.1). Such an exception does not appear to exist in this case. For this reason, the set of claims does not satisfy the requirement of conciseness (PCT Article 6).

Independent claim 19 does not satisfy the requirement for clarity of PCT Article 6. The subject matter for which protection is sought is not clear because the

claim attempts to define the subject matter in terms of the result to be achieved, but in so doing merely states the problem to be solved. To overcome this defect, the technical features necessary for achieving this result would have to be included in claim 19 as method steps.

Claim 18 is unclear as a result of its back-reference to claim 1, which already contains the characterizing features of claim 18.

To overcome the objection with regard to the lack of conciseness, it seems appropriate for an amended set of claims to be submitted in which the subject matter is defined by a single independent claim for each category (device, method and use), to which may be added dependent claims covering the optional features (PCT Rule 6.4).

9. In the written reply of 15 March 2004, the applicant provides arguments for the patentability of the subject matter of claim 1 and indicates that, for reasons of cost, he would prefer not to adapt the other claims until the regional/national phase. In this letter (page 3, final paragraph), the applicant expresses the view that the new version of claim 1 has rendered moot the objection with regard to a lack of unity of invention. This is not actually correct, however, for the very reason that there is no explanation of the fact that the amended version of claim 1 submitted with the letter of 15 March 2004 is intended to replace the previous claim 1. Therefore, only claim 1 was exchanged, while claims 2-25, for which the objection with respect to a lack of novelty was already lifted in the written opinion, remain unamended.

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10. As was already expressed clearly and unambiguously in the written opinion, retaining a number of independent claims belonging to the same category normally results in an objection with regard to a lack of conciseness within the meaning of PCT Article 6, provided this is not one of those rare exceptional cases in which it is appropriate to keep several independent claims in the same category. Nevertheless, an expert opinion is being established for all four independent claims.

However, the applicant is asked to note for future reference that an objection with regard to a lack of conciseness within the meaning of PCT Article 6 usually results in a preliminary international examination report in which only Box III "Non-establishment of opinion" is filled in for all of the claims.